An SI-Traceable Space-based Climate Observing System

A CEOS, WMO-GSICS Workshop

Day 1: 9 Sept. 2019

Session and Presenter	Institution	Title	Duration	Start Time
Introduction				
Nigel Fox	NPL	Welcome	00:15	08:30
Tim Hewison	EUMETSAT	Extending GSICS to Inter-Calibrate Satellite Radiances to an Absolute Scale	00:30	08:45
Greg Kopp	LASP	White paper contribution plan & Special Issue	00:20	09:15
Applications and Needs				
Bruce Wielicki	NASA-Langley	Designing the Climate Observing System of the Future	00:30	09:35
Heather Lawrence	ECMWF	[GAIA-CLIM] (title TBD)	00:20	10:05
Fabien Carminati	UK Met Office	On the need for SI-traceable calibration in support of NWP and reanalysis	00:30	10:25
		Break and Posters	00:30	10:55
Jack Xiong	NASA/GSFC	MODIS and VIIRS Calibration History and Future Outlook	00:30	11:25
Byron Tapley	CSR	GRACE - title TBD	00:30	11:55
URS	ESA	Operational User Requirements for benchmark sensors such as TRUTHS	00:20	12:25
		Lunch	01:00	12:45
Tom Pagano	JMA	Improving the longest SI traceable hyperspectral infrared radiance record from space: AIRS	00:30	13:45
B Guenther	Stellar Sol.	An introduction and investigation into the SI world of climate attribute studies of SmallSat,	00:20	14:15
Samuel Hunt	NPL	Applying Metrological Techniques to Satellite Fundamental Climate Data Records	00:20	14:35
		Break and Posters	00:30	14:55
Bill Bell	ECMWF	Traceable Observations in Support of the Copernicus Climate Change Service	00:30	15:25
Dennis Helder	USGS	Vicarious Calibration—Current Capabilities and Future Possibilities	00:20	15:55
Discussion		Discussion on White Paper Contributions on Societal Needs & Applications	00:45	16:15
		Icebreaker and Poster Viewing	01:30	17:00
		Adjourn		18:30

Day 2: 10 Sept. 2019

Session and Presenter	Institution	Title	Duration	Start Time
Reflected Solar Observations				
Peng Zhang (Keynote)	CMA	The Development of Chinese Radiometric Benchmark Satellite	00:45	08:30
Bruce Wielicki	NASA-Langley	CLARREO Pathfinder Mission: Calibrating Climate Observing Systems of the Future	00:30	09:15
Greg Kopp	LASP	CLARREO Pathfinder Mission: The HyperSpectral Imager for Climate Science (HySICS)	00:30	09:45
Nigel Fox	NPL	Traceable Radiometry Underpinning Terrestrial- and Helio- Studies (TRUTHS): Enabling a	00:30	10:15
		Break and Posters	00:30	10:45
Paul Green	NPL	SI-Traceable pre-flight calibration of optical satellite sensors	00:20	11:15
Lingling Ma	CAS	Stratospheric high-altitude-balloon-based Demonstration and Validation System for Chinese	00:20	11:35
Javier Gorroño	NPL	Defining an optimised cross-calibration strategy based on matchup correlation	00:20	11:55
Xin Ye	CAS	Investigation on Space Radiation Standard of Solar Reflection Spectrum	00:20	12:15
Dennis Helder	USGS	A Piggyback Radiometer Concept for Improved Calibration of Disaggregated Earth Observing	00:20	12:35
		Lunch	01:00	12:55
Marc Bouvet	ESA	The benefit of upcoming radiometric reference missions for vicarious calibration methodologies	00:30	13:55
Wenbo Sun	SSAI	Polarization distribution models (PDMs) for NASA CLARREO Pathfinder's inter-calibration	00:20	14:25
		Break and Posters	00:30	14:45
Lunar Calibrations				
Tom Stone (Keynote)	USGS	Recent Developments Toward a High-accuracy Lunar Reference Standard for Reflected Solar	00:45	15:15
Trevor Jackson	LaRC	ARCSTONE: Calibration of Lunar Spectral Reflectance from Space	00:30	16:00
Xiuqing Hu	CMA	Ground-based and Space-borne Lunar Observation in China and Prospective Improvement	00:30	16:30
Discussion		Discussion on White Paper Contributions on Reflected Solar & Lunar Observations	00:45	17:00
		Adjourn - Walk to Dinner	00:45	17:45
		Dinner (Optional)		18:30

Day 3: 11 Sept. 2019

Session and Presenter	Institution	Title	Duration	Start Time
IR Observations				
Dave Smith	RAL	Challenges for In-Flight Calibration of Thermal Infrared Instruments for Earth Observation	00:30	08:30
Lei Ding	CAS	Highly accurate FTIR instrument for space observation	00:30	09:00
Hank Revercomb (Keynote)	SSEC	The IR Absolute Radiance Interferometer (ARI) for CLARREO: Heart of a Pathfinder Mission	00:45	09:30
Fred Best	SSEC	The IR Absolute Radiance Interferometer (ARI) Prototype for CLARREO: New Technologies	00:20	10:15
Dave Tobin	SSEC	The IR Absolute Radiance Interferometer (ARI) Prototype for CLARREO: Assessing the Ability	00:20	10:35
		Break and Posters	00:30	10:55
Broadband Radiation and Solar Observations				
Martin Mlynczak (Keynote)	NASA-Langley	Continuity of Earth Radiation Budget Measurements from Space	00:45	11:25
Erik Richard	LASP	Accurate Long-term Measurements of Solar Spectral Irradiance: The TSIS-1 Spectral	00:20	12:10
Xiaobing Zheng	CAS	VIS-SWIR solar spectral irradiance radiometry based on Parametric Down-Conversion	00:20	12:30
		Lunch	01:00	12:50
Microwave Observations				
Ed Kim	NASA/GSFC	SI Traceable Microwave Brightness Temperature Calibration/Inter-calibration: Benefits,	00:30	13:50
Vince Leslie	MIT	Climate-quality Calibration for LEO-microwave Radiometry	00:20	14:20
Hu (Tiger) Yang	UMD	Lunar Microwave Brightness Spectrum for SI Traceable Calibration of Spaceborne Microwave	00:20	14:40
Discussion		Discussions on White Paper Contributions for IR, Broadband, and Microwave Observations (in	00:45	15:00
		Break and Posters	00:30	15:45
Meeting Summary				
		White Paper and Special Issue Plans	00:30	16:15
		Follow-on workshop - Active instruments, L2->L1 link	00:20	16:45
		Adjourn		17:05

Poster Presenters	Institution	Title
Ling Li	NIM, China	A study on the effects of uncertainty sources on radiometric measurement in ground-based
Xu Liu	NASA-Langley	Fast Radiative Transfer Model in Support of CLARREO Pathfinder and other Inter-Calibration
Zhifeng Wu	NIM, China	Spectral Radiance Calibration at Low Light Level
Sarah Douglas	NPL	Truths workshop abstract - Comparing ECV Products With the Evaluation and Quality Control
Heather Lawrence	ECMWF	[GAIA-CLIM] (title TBD)
Qijin Han	CAS	Research Plan on Radiometric Re-calibration Technology for Historical Data of Chinese Land
Yongguang Zhao	CAS	Technical progress in cross-calibration through spaceborne SI-traceable reference instruments